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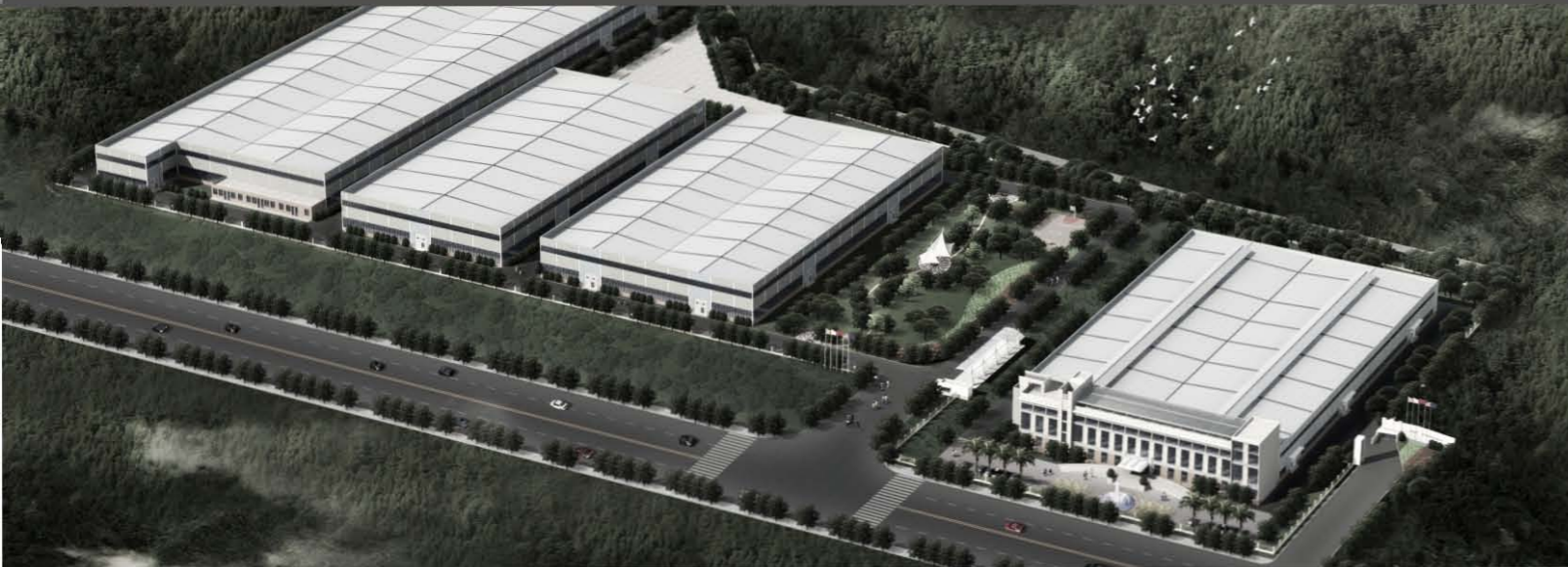
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# M Series Forklift Truck

Heavy Duty Forklift Capacity 13.5-32ton



**MAXIMAL  
FORKLIFT**

All the data on the catalogue is just for your reference. Maximal reserve the right for update or amendment when necessary.





## Maximal introduces heavy capacity forklifts

Maximal heavy duty forklift trucks, available in 13.5 capacity ratings, are designed to handle heavy loads in the toughest environments. From the robust wide view mast to the world class components including CUMMINS engines, KESSLER drive axle, ZF transmission and related accessories these trucks are designed to meet and exceed your application requirements.

These trucks are designed with modern ergonomics that allow the operator to be more productive in demanding conditions. Operator comfort was a key issue in the design of the all weather spacious cab including fully adjustable safety seat, tilt steering column and the 360 degree view through the panoramic windows. Maximal engineers have developed a proven design to tackle the most demanding customer applications.

## Intelligent by Design

The incorporation of a CAN-Bus system allows for a seamless connection of the vehicle Control Module (VMC) and Engine Control Module (ECM). This allows immediate exchange and accessibility to all data. Additional benefits include a significant reduction in wiring as well as increased functionality over conventional systems. The CAN-Bus system also delivers excellent reliability and full diagnosis capabilities, simplifying the servicing of the truck.

## Improved Fuel Economy

Minimize Tier 3 requirements  
Program to Lower Rated Speeds to offset fuel consumption  
Alternate Governor and Torque settings  
Maintain fuel economy with HPCR ECM system compared to mechanical system







## World Class Efficient ZF Transmission

ZF transmission from Germany in Maximal 13.5-32t/29,700-70,000 LB capacity heavy duty forklift trucks ZF transmissions offer these features:

- Fully reversible power shift control
- 3 forward and 3 reverse speeds
- Positive speed engagement
- Reduction of operating costs
- Lower operating noise
- Customer orientated serviceability
- Applicable for electronic driveline management and inching

## Lower Maintenance Drive Axle & Brakes

German KESSLER drive Axle provides excellent lateral stability and long-term durability. Full floating axle shafts and hub planetary final drives reduce axle windup to deliver higher torque to the drive wheels allowing greater tractive effort and performance. Multi-plate wet disc braking system supplied by American MICO Corp. offers more effective and reliable braking.



## Superior visibility

The Cab also contributes to providing the driver with panoramic 360 Degree visibility, featuring:

- Large curved front window, fitted with tinted safety glass provides better visibility.
- Curved rear window with one-piece glass.
- Minimum use of steel parts, providing the maximum possible glazed area.
- Wide-view rear view mirrors are mounted inside the cab stay cleaner and are protected from damage.
- The dash and display panel is mounted to the right hand side of the driver, so visibility through the windshield is unobstructed.
- Excellent rearwards visibility is enhanced with the sloping design of the hood and counterweight.
- A clear view to the front load and surrounding area is optimized through the Maximal wide view mast.

## Maintenance Intervals Doubled and Efficient Diagnostic program

- Cummins Tier 3 Scheduled Maintenance 500 hours/6 month intervals for charge air cooled; same schedule for coolant changes; Dual Stage fuel filtration to improve particle separation, filter life and protect vital fuel system components.
- Equipped as standard with either a manual or power hydraulic tilting cab, to ensure easy access to major components for inspection and service.
- Low side steps and large grab handles, providing operators safe and easy access to the operators cab. Technicians can use side steps for daily inspections and maintenance.
- Uniform placement of electrical and hydraulic tubing and hoses.
- Centralized diagnostics in the operator cab
- "CAN bus" receptacle in the operator cab, for engine, transmission, hydraulics and instruments monitor panel.
- LCD display with diagnostics for engine, transmission and electrical systems to quickly identify service needs.
- Standard oil-immersed (wet) multi-plate disk brakes are virtually maintenance free.

## Power & Performance

Maximal 13.5-32t / 29,700-70,000 LB capacity forklift range is available with Cummins Diesel engine meeting a world standard Tier 3 emissions legislation:

13.5-mini 16t/29,700-35,200 LB capacity forklift Cummins QSB6.7 diesel engine features: 6-cylinder in-line, 6.7 liter displacement.

Charger air cooling w/waste gate controlled turbocharger. Max. 129kw(173Hp) output at 2200rpm, offering extra durability for long periods of peak performance. Smooth torque of 800 Nm at 1400rpm provides excellent acceleration for maximum power.

14-20t / 30,800-44,000 LB capacity forklift Cummins QSB 6.7 diesel engine features:6-cylinder in-line, 6.7 liter displacement Charge-air cooling w/waste gate controlled turbocharger. Max 142 kW(192 Hp) output at 2300 rpm,offering extra durability for long periods of peak performance.Smooth torque of 930 Nm at 1500 rpm provides excellent acceleration for maximum power.

20-32t / 30,000-70,000 LB capacity forklift Cummins QSC 8.3 diesel engine features:6-cylinder in-line , 8.3 liter displacement Charge-air cooling w/ waste gate controlled turbocharger. Max 176 kW (238 Hp) output at 2300 rpm,offering extra durability for long periods of peak performance.Smooth torque of 1085 Nm at 1500 rpm provides excellent acceleration for maximum power.

## Green & Clean

Euro III / EPA: Diesel engines that incorporate Japanese and American advanced engine technologies feature excellent environmental performance and conform to the world latest EPA Tier3 and EU Stage IIIA emission regulations.

## Optional Equipment

- Specific masts 3M/118" MFH to 6M/240" MFH Simplex mast >Side shift/Fork position carriages with shaft type forks
- Solid / Pneumatic size tires
- Air conditioning
- Rear camera surveillance system
- Special RAL colors
- Various attachments >Contact your MAXIMAL dealer in your area for additional details.

Engine protection system, sensing low oil pressure and high coolant temperature monitors the engine performance and shuts down the engine prior to a possible failure. An override function for emergency situations is a standard feature.



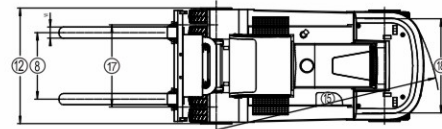
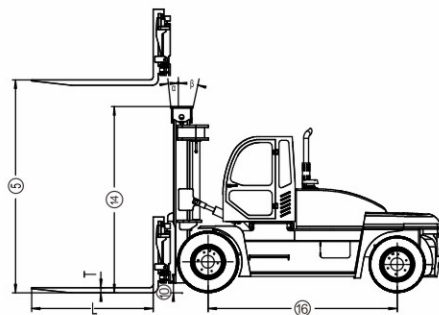
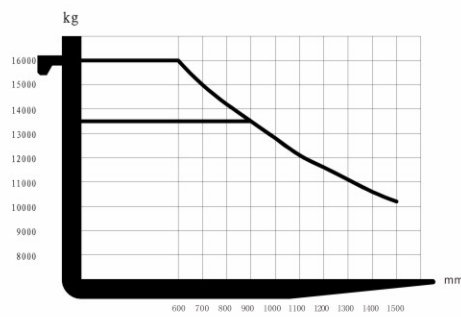
**CUMMINS QSB 6.7 / CUMMINS QSC 8.3**



**M series 13.5-mini16t diesel forklift**

1	Model			FD135T-MGU3	FD135T-MWS3	FD160T-MXGU3	FD160T-MXWS3
2	Power Type			Diesel	Diesel	Diesel	Diesel
3	Rated Capacity		kg	13500	13500	16000	16000
4	Load Centre		mm	900	900	600	600
5	Lift Height		mm	4000	4000	4000	4000
6	Mast tilt angle	Front/rear	Deg	6°/12°	6°/12°	6°/12°	6°/12°
7	Fork Dimension (L×W×T)			1800×200×90	1800×200×90	1500×200×90	1500×200×90
8	Fork Regulating Range			840-2200	840-2200	720-2200	720-2200
9	Max.sideshifter Range		mm	630(±315)	630(±315)	630(±315)	630(±315)
11	Min.Ground clearance (Bottom of mast)		mm	250	250	250	250
12	Overall length(include forks)		mm	7150	7150	6890	6890
13	Overall width		mm	2430	2430	2430	2430
14	Overall height	Driver's cabin	mm	3190	3190	3190	3190
15		Mast	mm	3870	3870	3870	3870
16	Min.turning radius		mm	4700	4700	4700	4700
17	Wheelbase		mm	3500	3500	3500	3500
18	Front Tread		mm	1743	1743	1743	1743
19	Rear Tread		mm	2050	2050	2050	2050
20	Front Tyre			11.00-20-18PR	11.00-20-18PR	12.00-20-20PR	12.00-20-20PR
21	Rear Tyre			11.00-20-18PR	11.00-20-18PR	12.00-20-20PR	12.00-20-20PR
22	Speed	Travel(Unladen)	km/h	26	26	26	26
23		Lifting(Laden)	mm/sec	350	350	330	330
24		Lowering(Laden)	mm/sec	380	380	380	380
25	Max. Drawbar pull(Laden)		KN	100	100	120	120
26	Max. Gradeability(Laden)		%	22	22	22	22
27	Self weight		kg	21000	21000	22000	22000
28	Engine	Model		YC6B160Z-T20	QSB6.7-C173	YC6B160Z-T20	QSB6.7-C173
29		Manufacturer		Chinese Yuchai	Cummins	Chinese Yuchai	Cummins
30		Rated output/r.p.m.	kw	118/2200	129/2200	118/2200	129/2200
31		Rated torque/r.p.m.	N·m	560/1500	799/1400	560/1500	799/1400
32		No.of cylinder		6	6	6	6
33		Bore x Stroke	mm	108×125	108×125	107×124	107×124
34		Displacement	L	6.871	6.871	6.7	6.7
35	Fuel tank capacity		L	140	140	140	140
36	Transmission	Manufacturer		Hangchi	ZF	Hangchi	ZF
37		Model			3WG171		3WG171
38	Drive axle	Stage	Front/rear	3/3	3/3	3/3	3/3
39		Manufacturer		Chinese Huachen	Chinese Huachen	Chinese Huachen	Chinese Huachen
40		Service Brake		Wet brake	Wet brake	Wet brake	Wet brake
41	Parking Brake			Caliper disc brake	Caliper disc brake	Caliper disc brake	Caliper disc brake
42	Battery Voltage/Capacity		V/Ah	24/180	24/180	24/180	24/180
43	Operating pressure(For attachments)		Mpa	19	19	19	19

**Load Chart**

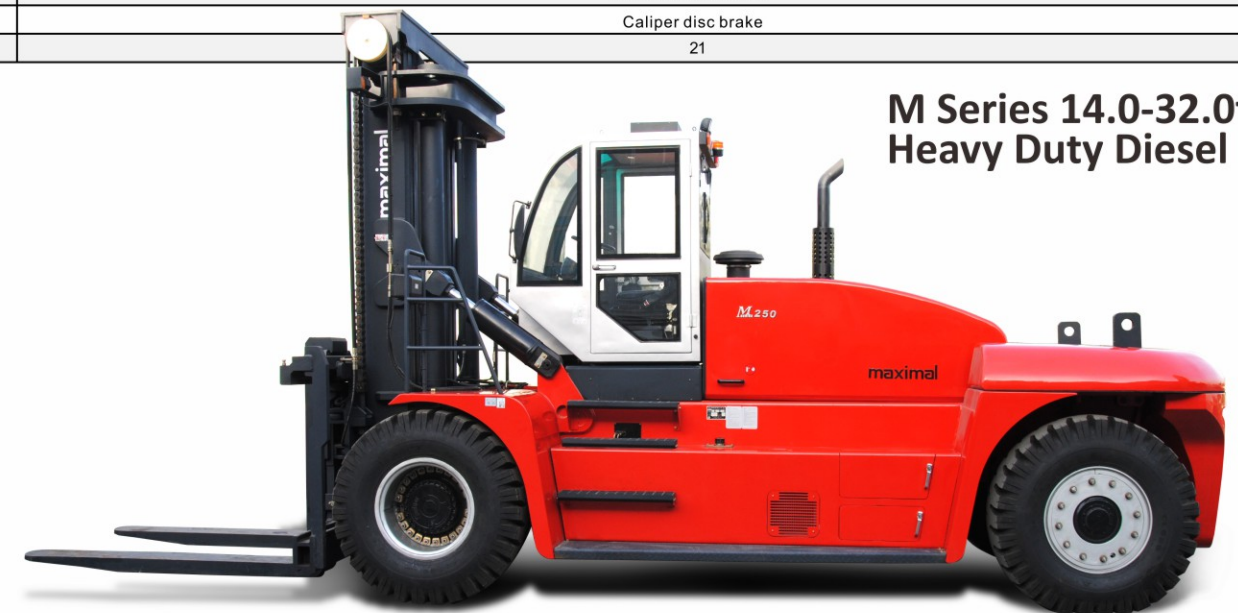
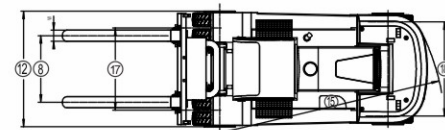
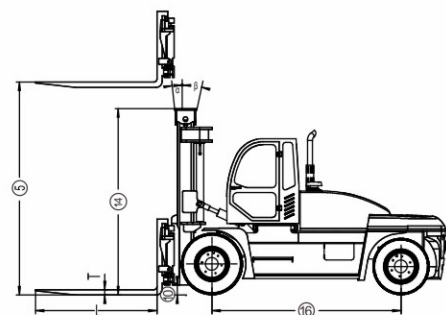
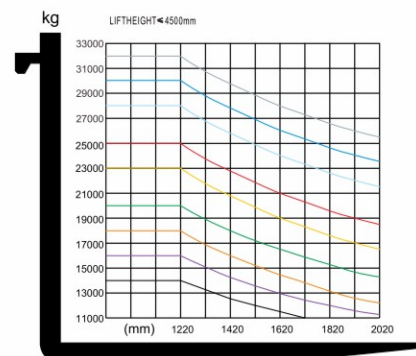


**M Series 13.5-mini 16.0ton Heavy Duty Forklift**

**M series 14.0-32.0t diesel forklift**

Model			FD140T-MWK3	FD160T-MWK3	FD180T-MWK3	FD200TX-MWK3	FD200T-MWM3	FD230T-MWM3	FD250T-MWM3	FD280TX-MWT3	FD300TX-MWT3	FD280T-MWT3	FD300T-MWT3	FD320T-MWT3		
1	Model															
2	Power Type		Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	
3	Rated Capacity		kg	14000	16000	18000	20000	20000	23000	25000	28000	30000	28000	30000	32000	
4	Load Centre		mm	1220	1220	1220	900	1220	1220	1220	900	1220	1220	1220	1220	
5	Lift Height		mm	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	
6	Mast tilt angle	F/R	Deg	6°/12°	6°/12°	6°/12°	6°/12°	6°/12°	6°/12°	6°/12°	6°/12°	6°/12°	6°/12°	6°/12°	6°/12°	
7	Fork	LxWxT	mm	2440x250x100	2440x250x105	2440x250x110	1800x250x100	2440x300x105	2440x300x110	2440x300x110	1800x300x105	1800x300x105	2440x300x110	2440x320x110	2440x320x110	
8		Regulating range	mm	910-2240	910-2240	910-2240	910-2240	1040-2660	1040-2660	1040-2660	1040-2660	1040-2660	1500-3120	1500-3120	1500-3120	
9		Max.side shifter	mm	660(±325)	660(±330)	660(±330)	660(±330)	810(±405)	810(±405)	810(±405)	810(±405)	810(±405)	810(±405)	810(±405)	810(±405)	810(±405)
10	Front overhang (Wheel center to fork face)		mm	1060	1060	1060	1060	1200	1200	1200	1200	1200	1260	1260	1260	
11	Rear Overhang		mm	1000	1000	1000	1000	1100	1100	1100	1200	1200	1260	1260	1260	
12	Ground clearance (Bottom of mast)		mm	220	220	220	220	300	300	300	300	300	300	300	300	
13	Overall dimensions	Overall length(include forks)		mm	8300	8300	8300	7660	9240	9240	9240	8600	8600	9740	9740	
14		Overall width		mm	2535	2535	2535	2535	3020	3020	3020	3020	3020	3420	3420	3420
15		Overall height	Driver's cab	mm	3280	3280	3280	3280	3580	3580	3580	3580	3580	3800	3800	3800
16			Mast	mm	3920	3920	3920	3920	4250	4250	4250	4250	4250	4300	4300	4300
17	Mast extended height		mm	4930	4930	4930	4930	6270	6270	6270	6270	6270	6550	6550	6550	
18	Min.turning radius(outside)		mm	5300	5300	5300	5300	6100	6100	6100	6100	6100	6100	6800	6800	6800
19	Tyres	Front		12.00-24-20PR	12.00-24-20PR	12.00-24-20PR	12.00-24-20PR	14.00-24-24PR	14.00-24-28PR	14.00-24-28PR	14.00-24-28PR	14.00-24-28PR	14.00-24-28PR	16.00-25-32PR	16.00-25-32PR	16.00-25-32PR
20		Rear		12.00-20-20PR	12.00-20-20PR	12.00-20-20PR	12.00-20-20PR	14.00-24-24PR	14.00-24-28PR	14.00-24-28PR	14.00-24-28PR	14.00-24-28PR	14.00-24-28PR	16.00-25-32PR	16.00-25-32PR	16.00-25-32PR
21	Tread	Front	mm	1850	1850	1850	1850	2200	2200	2200	2200	2200	2490	2490	2490	
22		Rear	mm	2120	2120	2120	2120	2300	2300	2300	2300	2300	2470	2470	2470	
23	Wheelbase		mm	3800	3800	3800	3800	4500	4500	4500	4500	4500	4800	4800	4800	
24	Speed	Travel(Unladen)	km/h	30	30	30	30	28	28	28	28	28	26	26	26	
25		Lifting(Laden)	mm/s	320	320	320	300	300	300	300	300	300	270	270	260	
26		Lowering(Laden)	mm/s	380	380	380	380	330	330	330	330	330	310	310	310	
27	Max. Drawbar pull(Laden)		KN	125	125	125	125	160	160	160	160	160	250	250	250	
28	Max. Gradeability(Laden)		%	25	25	25	25	25	25	25	25	25	20	20	20	
29	Self weight		kg	25600	25800	26300	26000	35200	35400	36400	36000	36200	41000	42500	44000	
30	Weight Distribution	Laden	Front Axle	kg	35100	38400	41600	42920	49160	53870	56940	59170	62100	63700	66750	70300
31			Rear Axle	kg	4500	3400	2700	3080	6040	4530	4460	4830	4100	5300	5750	5700
32		Unladen	Front Axle	kg	12700	12800	12800	12600	18400	18500	18500	18100	18100	21000	21000	21500
33			Rear Axle	kg	12900	13000	13500	13400	16800	16900	17900	17900	18100	20000	21500	22500
34	Battery		V/Ah	2x12/120	2x12/120	2x12/120	2x12/120	2x12/120	2x12/120	2x12/120	2x12/120	2x12/120	2x12/120	2x12/120	2x12/120	
35	Engine	Model		QSB6.7						QSC8.3						
36		Manufacturer		Cummins						Cummins						
37		Rated output/r.p.m.		kw	142/2300						176/2200					
38		Rated torque/r.p.m.		N·m	930/1500						1085/1500					
39		No.of cylinder			6						6					
40		Bore x Stroke		mm	107x124						117x135					
41		Displacement		L	6.7						8.3					
42	Fuel tank capacity		L	150						250						
43	Transmission	Manufacturer		ZF						ZF						
44		Type		3WG171						3WG211						
45		Stage	F/R	3/3						3/3						
46	Drive axle	manufacturer		Chinese Huachen						KESSLER						
47		service brake		Wet Multi-disk Brake						Wet Multi-disk Brake						
48		parking brake		Caliper disc brake						Caliper disc brake						
49	Operating pressure(For attachments)		Mpa	19						21						

**Load Chart**



**M Series 14.0-32.0ton Heavy Duty Diesel Forklift**



**FD135-160XT Wide View Mast**

Mast Name	Max.Fork Height (mm)	Overall height (mm)	Door frame weight of pallet fork (kg)		Load Centre (mm)		Tiltangle (F/R)	Load Capacity (kg)		Self weight (kg)			Remark
			FD135T	FD160T	FD135T	FD160T		FD135T	FD160T				
M300	3000	3370	5324	5350	900	600	6°/12°	13500	16000				
M350	3500	3620	5450	5480	900	600	6°/12°	13500	16000				
M400	4000	3870	5580	5615	900	600	6°/12°	13500	16000				Standard
M450	4500	4120	5770	5750	900	600	6°/12°	13500	16000				
M500	5000	4420	6150	6070	900	600	6°/6°	13000	15000				
M550	5500	4670	6225	6175	900	600	3°/6°	12500	14000				
M600	6000	4970	6375	6300	900	600	3°/6°	11500	13000				

**FD140-200TX Wide View Mast**

Mast Name	Max. Fork Height (mm)	Overall height (mm)	Load Centre (mm)				Tiltangle (F/R)	Load Capacity (kg)				Self weight(kg)				Remark
			FD140T	FD160T	FD180T	FD200TX		FD140T	FD160T	FD180T	FD200TX	FD140T	FD160T	FD180T	FD200TX	
M300	3000	3420	1220	1220	1220	900	6°/12°	14000	16000	18000	20000	25360	25560	26060	25760	
M350	3500	3670	1220	1220	1220	900	6°/12°	14000	16000	18000	20000	25480	25680	26180	25880	
M400	4000	3920	1220	1220	1220	900	6°/12°	14000	16000	18000	20000	25600	25800	26300	26000	Standard
M450	4500	4170	1220	1220	1220	900	6°/12°	14000	16000	18000	20000	26010	26210	26710	26410	
M500	5000	4420	1220	1220	1220	900	6°/6°	13200	15000	16800	18800	26130	26330	26830	26530	
M550	5500	4670	1220	1220	1220	900	3°/6°	12500	14200	15800	17800	26250	26450	26950	26650	
M600	6000	4920	1220	1220	1220	900	3°/6°	12000	13500	15000	17000	26370	26570	27070	26770	

**FD200-300TX Wide View Mast**

Mast Name	Max.Fork Height (mm)	Overall height (mm)	Load Centre (mm)					Tilt angle (F/R)	Load Capacity (kg)					Self weight (kg)					Remark
			FD200T	FD230T	FD250T	FD280TX	FD300TX		FD200T	FD230T	FD250T	FD280TX	FD300TX	FD200T	FD230T	FD250T	FD280TX	FD300TX	
M300	3000	3760	1220	1220	1220	900	900	6°/12°	20000	23000	25000	28000	30000	34625	35025	36025	35625	35825	
M350	3500	4010	1220	1220	1220	900	900	6°/12°	20000	23000	25000	28000	30000	34815	35215	36215	35815	36015	
M400	4000	4260	1220	1220	1220	900	900	6°/12°	20000	23000	25000	28000	30000	35000	35400	36400	36000	36200	Standard
M450	4500	4510	1220	1220	1220	900	900	6°/12°	20000	23000	25000	28000	30000	35500	35900	36900	36500	36700	
M500	5000	4760	1220	1220	1220	900	900	6°/6°	19400	22200	24200	26500	27500	35690	36090	37090	36690	36890	
M550	5500	5010	1220	1220	1220	900	900	3°/6°	18900	21500	23500	25500	26500	35880	36280	37280	36880	37090	
M600	6000	5260	1220	1220	1220	900	900	3°/6°	18500	21000	23000	24500	25500	36070	36470	37470	37070	37270	

**FD280-320T Wide View Mast**

Mast Name	Max.Fork Height (mm)	Overall height (mm)	Load Centre (mm)			Tilt angle (F/R)	Load Capacity (kg)			Self weight (kg)			Remark
			FD280T	FD300T	FD320T		FD280T	FD300T	FD320T	FD280T	FD300T	FD320T	
M400	4000	4500	1220	1220	1220	6°/12°	28000	30000	32000	41000	42500	44000	Standard
M450	4500	4750	1220	1220	1220	6°/12°	28000	30000	32000	41600	43100	44600	
M500	5000	5000	1220	1220	1220	3°/6°	27000	28500	30000	41850	43350	44850	